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ABSTRACT

This case study examined which outcomes stakeholders desire for Bachelor of Information Technology (BIT) degree graduates at Swinburne University of Technology (SUT) in Australia and whether they find these outcomes among graduates. The four stakeholder groups were current BIT undergraduates, BIT graduates, academic staff of SUT involved with the BIT Program, and employers of BIT graduates. Of 351 questionnaires mailed out, 167 were returned. Among the findings were the following: (1) all stakeholders rated team skills, listening skills, and proficiency in solving workplace problems as highly important; (2) all stakeholders also agreed that preparation for further postgraduate study, specialist training, and understanding of mathematical disciplines were low priorities; (3) BIT students rated writing ability significantly lower than academic staff or employers did; (4) academic staff rated student accomplishment in logical thinking, listening skills, self-discipline, and independence lower than students rated themselves in these skills; (5) in most instances employers rated graduate accomplishment higher than academic staff did. Includes four tables and four figures which detail study findings. (JB)

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GENERIC SKILLS REQUIREMENT FOR STAKEHOLDERS:

AN AUSTRALIAN CASE STUDY

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ABSTRACT

The Australian Higher Education Council's recent document on the Quality of Higher Education, inter alia, identifies the acquisition of generic skills as an important outcome for graduates. This case study examines the general outcomes regarded by various stakeholders to be important for students to achieve within a Bachelor of Information Technology degree, as well as the extent to which the graduates are perceived as having achieved those potential outcomes.

for Management Research, Policy Analysis, and Planning

This paper was presented at the Thirty-Fourth Annual Forum of the Association for Institutional Research held at The New Orleans Marriott, New Orleans, Louisiana, May 29, 1994 - June 1, 1994. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum Papers.

Jean Endo
Editor
Forum Publications

1. INTRODUCTION

The current Australian Government's concern for quality was triggered by public disquiet about the deteriorating state of Australian tertiary education (Lindsay, 1992). This public perception of the tertiary education environment, which had occurred earlier in the USA, can be attributed to several factors. These include the trend towards mass tertiary education, a dramatic increase in demand for tertiary places as a consequence of a high retention rate of year 12 students, economic rationalism, and the demand for accountability in public affairs in difficult economic times.

In October 1991, the Australian Higher Education Council (HEC) was requested to recommend policy initiatives to enhance quality in higher education by the Minister for Higher Education and Employment Services. The HEC, following a series of consultations with key peak members in the higher education sector, released a Draft Advice document on The Quality of Higher Education in July 1992 for comment and further input from the interested parties. Inter alia, this report resulted in the establishment of a national committee, the Committee for Quality Assurance in Higher Education (CQAHE). On 8 March 1994, the Australian Federal Minister for Employment, Education and Training endorsed the recommendations emanating from the CQAHE's first national quality review audit. All Australian universities received some of the $76.8 million quality funds committed by the Australian Government since "the Australian higher education system is made up of a diverse range of institutions, all of which are striving for excellence within the context of their mission and goals"(Crean, 1994)

2. THE PRESENT STUDY

The aforementioned HEC document identified generic skills as being an important attribute of Australian graduates. Generic skills are defined as being those attributes which all graduates should acquire from their respective institutions irrespective of their discipline or field of study, including learning skills, effective communication, logical and lateral thinking and so on. The attributes are distinguished by the HEC from two others, namely, discipline related bodies of knowledge and professional/technical or job related skills.

The purpose of this study was to explore what general outcomes the various stakeholders believed to be important for students to achieve within the Bachelor of Information Technology (BIT) Degree offered at Swinburne University of Technology, as well as the extent to which the students had achieved those potential outcomes. Underlying this overall purpose, the study aimed to indicate (a) the similarities and differences in educational priorities between the stakeholder respondents, (b) the issues to be addressed based on stakeholder perceptions and (c) the extent to which stakeholder perceived priorities are being achieved by students.

In order to fulfill the aims of the study, data on stakeholder perceptions of the relative importance of the various generic skills relating to the BIT program were gathered from a structured questionnaire entitled the BIT Student Potential Outcome Survey, which was administered to stakeholder respondents. The questionnaire was the outcome of a pilot survey undertaken in late 1992 to investigate the relative importance of the various generic skills that students should acquire from their university study as perceived by students, staff and employers. The experiences gained from this pilot study (for details of the study, please refer to the 1992 and 1993 AAIR conference papers of the authors of this report) were utilised in developing the survey instrument of this study. The first section of the questionnaire for the present study related to the personal details of the stakeholder (or the respondent). The second section consisted of two parts

containing 34 Likert-type items, each measured on a five-point scale. Part A dealt with the estimate of importance of possible outcomes for BIT students while Part B related to the extent to which the respective stakeholders perceived Swinburne BIT students typically as having achieved the potential outcomes at the end of the program.

Owing to the scale of the task in trying to gauge the perception of all the stakeholders concerned, this project limited its scope to examining the responses of four stakeholder groups, namely, the current BIT undergraduates, the BIT graduates, the academic staff of SUT who are involved in the BIT Program and the employers of BIT graduates.

Universal sampling was applied so as to cast a wide net to catch as many of the targeted stakeholders as possible. This is also appropriate for a mail survey in which returns are expected to be lower than interview schedules. A total of 351 questionnaires were mailed to the four stakeholder groups in mid 1993, namely, 115 to the graduates, 102 to the current undergraduates, 35 to the academic staff, and 99 to the employers. Out of this total, 167 or 48 per cent of the questionnaires were returned completed, and the response varied according to stakeholder group. Of the four stakeholder groups, only academic staff approached a full response rate. The other three stakeholder groups, however, are comparable at around 40% each, which is a very acceptable response rate for such postal surveys.

3. PERCEPTIONS OF STAKEHOLDERS OF GENERIC SKILLS

Tables of results are presented to give the full detail of the findings (see attached), but with such a complex and rich data set, only major points can be discussed with reasonable brevity in order to illustrate the potential of the methodology for addressing issues of quality within a higher education setting. The tables present mean ratings by stakeholders of either perceived importance of outcomes or level of accomplishment among BIT students for each of the 34 generic skills. The numbers represent responses on a 5-point scale as follows: 1 = Not important/accomplished

at all; 2 = slightly important/accomplished; 3 = Moderately important/accomplished; 4 = Quite important/accomplished; 5 = Very important/accomplished. In each table, the question number precedes a shortened version of the actual questionnaire item.

Perceived Importance of Generic Skills to Stakeholder Groups

Table 3.1 shows the mean ratings by BIT students, graduates, academic staff and employers of the importance of each of the 34 potential generic skills outcomes presented in the BIT Student Potential Outcome Survey and indicates the statistically significant differences between groups, using two-tailed t tests.

It can be seen from Tables 3.2 and 3.3 that there are both similarities and differences between the stakeholders' perceived priorities in terms of generic skills. In terms of similarities, there is a pleasing unanimity, for example, that team skills, listening skills and proficiency in solving workplace problems are highly important generic skills. Apart from one statistically significant difference between BIT students and graduates shown in Table 3.1 in respect of solving workplace problems (with graduates rating the skill higher than current students), there are no statistically significant differences between the stakeholders in their rating of the importance of these skills. Within the logic of this comparative approach, this could be taken as an indicator of BIT quality, with all stakeholders pulling in the same direction.

Equally, there is a large degree of unanimity at the other end of the priority ranking. Tables 3.1, 3.2 and 3.3 show that the stakeholders here agree that preparation for further postgraduate study or specialist training and understanding and appreciation of mathematical disciplines are relatively low priorities, as are the generation of wealth in commerce or industry and the capacity to contribute to the development of the community. The unanimity on the latter two aspects, however, raises other issues about which one may only speculate. The government and the

community are also stakeholders in higher education, and they might believe that wealth generation and contribution to the community should be high priorities. Presumably no individual course can satisfy all possible stakeholders, however, and one must look to the higher education system as a whole for the satisfaction of the interests of what might be termed the "generic stakeholders", such as the government and the community, as opposed to the "specific stakeholders" examined here. It is interesting to note in Table 3.1, nonetheless, that BIT students and graduates rate the generation of wealth in commerce and industry significantly higher in importance than either academic staff or employers, indicating perhaps a generational shift in priorities. This would be consistent with general observations about the more materialistic campus ethos of the present compared to the allegedly more idealistic ethos of, say, the 1960s, albeit in very different economic circumstances.

So far so good. What about the differences, however? BIT students rate the ability to write well significantly lower than either academic staff or employers. This accords well with coalface experience in higher education where students commonly complain that lecturers spend too much time criticising their English syntax, grammar and spelling in written work instead of concentrating on "substantive issues", as if the two were separable. This could be taken as an indicator of an area for future attention in the Swinburne BIT in terms of improving quality. If students do not fully realise the importance of the generic skill of writing well, then they are more likely to neglect its development. BIT staff could therefore profitably give attention to specifically and explicitly making students more aware of the significance of this generic skill as a first step in enhancing it. In fact, this is likely to be a very general problem extending right across the spectrum of higher education as more and more specialised courses have become the norm.

Generic Skill Accomplishment of BIT Students as Perceived by Stakeholder Groups

Table 3.4 shows the mean ratings by the BIT stakeholders of the degree of accomplishment by BIT students/graduates in the various generic skills presented in the BIT Student Potential Outcome Survey and indicates the statistically significant differences between groups, using two-tailed t tests. As Table 3.4 shows, there is a more extensive and marked set of differences between stakeholders in respect of their views of the accomplishment of BIT students/graduates than was the case in terms of their views of the relative importance of the generic skills outcomes.

Table 3.4 indicates that academic staff rate the accomplishment of BIT students lower than students rate themselves in the following skills:

- **capacity to think logically**
- ability to resolve interpersonal conflicts
- development of personal and ethical values
- sensitivity to others' problems and difficulties
- understanding of social and behavioural sciences
- awareness of consequences of new technology
- **ability to listen to people carefully**
- **self-discipline**
- **capacity to work with minimum supervision.**

The skills printed in bold are those which staff have rated at a mean value of 4.00 or above, indicating a high degree of consensus among them that they are particularly important. This could mean that staff are being idealistic in their standards or that students are tending to overrate their abilities or a little of both. In any event, skills which are rated so highly in importance by staff and

yet fall somewhat short in accomplishment by their own estimation ought to be the focus of some consideration in terms of quality improvement by the Swinburne BIT staff.

On the other hand, Table 3.4 also indicates that staff rate the accomplishment of BIT students significantly higher than students rate themselves in the following skills:

- competence to speak well in public
- self-confidence
- ability to earn a good salary
- ability to generate wealth in commerce or industry

Although these skills are not among the highest rated for importance by staff, the first two are among the most important for students. The explanation which most readily suggests itself is the anxiety which young people so often have about getting things right and not making gaffes in front of others.

Employers rate the accomplishment of BIT students/graduates lower than graduates rate themselves in the following skills:

- preparation for further postgraduate study
- ability to resolve interpersonal conflicts
- **ability to listen to people carefully**
- **ability to plan**
- **self-discipline**
- **ability to manage time**
- **capacity to work with minimum supervision.**

The skills printed in bold are those which employers have rated at a mean value of 4.00 or above, indicating a high degree of consensus among them that they are particularly important. Following the logic used above, one would also say that perhaps these areas might usefully be the focus of some consideration in terms of quality improvement by the Swinburne BIT staff and by employers in terms of staff development and training. On the latter point, one must be realistic about what it is possible to achieve within the time-span and the curriculum span of any given course. This inevitably means that (a) no given course can produce all possible desirable outcomes to optimum level and (b) stakeholders must share responsibility for eventual outcomes.

There are some differences in the perceived accomplishment of BIT students between academic staff and employers. Here the differences are more numerous than in their estimation of the importance of generic skills. Happily, however, the employers rate the accomplishment of the students/graduates more highly than the academic staff in most instances. In view of the foregoing considerations these differences will not be considered further in the paper.

4. CONCLUSION

In conclusion, the Swinburne BIT program emerges form this examination of its performance in terms of generic skills enhancement very well indeed, and probably better than most specialist, technical programs at this level. It is clear that considerable attention has been directed to the development of some generic skills in ways that fall outside the normal ambit of most university courses, and this has been possible because of the very favourable resource base of the program and its strong industry links. Inevitably, given the recent emergence of generic skills enhancement as a specific and explicit goal of Australian higher education programs, rather than a general and implicit goal, there is room for improvement in some areas and that process may be assisted by a consideration of the detail of this analysis. One must note, however, that the course is intensive and the strains of that intensity are evident in some of the stakeholder responses detailed here. In

other words, the solution to improvement does not just lie in providing more of some existing elements or in introducing new elements, but in a realistic and careful consideration of generic skills priorities and in focusing explicitly on the enhancement of some skills while necessarily leaving others aside for another time and/or another place. No program can do everything. However, by targeting specific generic skills goals within the curriculum, the BIT program will have a means of arriving at fair and reasonable periodical assessments of its quality in this area.

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Table 3.1: Statistically Significant Differences Between Stakeholder ' Mean Ratings of the Importance of Generic Skills Outcomes

		Mean Rated Importance				Independent t tests for differences between means (2 tailed test					
Q.	Generic Skill Outcomes	Students	Graduates	Staff	Employers	Stud/Grad	Stud/Staff	Stud/Emp	Grad/Staff	Grad/Emp	Staff/Emp
1	Understanding of themselves & potential	4.00	4.24	4.10	3.86					p<.03	
2	Ability to serve society in useful ways	3.45	3.24	3.70	3.19				p<.02		p<.02
3	Capacity to think logically	4.32	4.62	4.67	4.62	p<.04	p<.02	p<.05			
4	Preparation for further postgraduate study	2.96	2.98	3.13	2.86						
5	Ability to resolve interpersonal conflicts	3.96	4.02	3.80	3.93						
6	Capacity to contribute to community development	3.36	3.02	3.37	2.83			p<.007			p<.03
7	Proficiency in solving workplace problems	4.38	4.67	4.63	4.62	p<.03					
8	Ability to write well	3.43	3.74	3.97	4.00		p<.006	p<.001			
9	Development of personal & ethical values	3.40	3.57	3.63	3.81			p<.02			
10	Sensitivity to others' problems & difficulties	3.75	3.64	3.57	3.81						
11	Understanding of career options	4.01	4.19	3.53	3.60		p<.01	p<.02	p<.001	p<.001	
12	Competence to speak well in public	4.25	4.26	3.87	3.52			p<.001	p<.05	p<.001	
13	Understanding of social & behav. sciences	3.43	3.43	3.10	2.88			p<.003		p<.01	
14	Knowledge to maintain ethical standards	3.77	3.90	3.83	4.05						
15	Awareness of consequences of new technology	4.17	3.79	3.87	4.02	p<.03					
16	Understanding of mathematical disciplines	2.66	2.83	2.83	2.76						
17	Self-confidence	4.42	4.45	3.90	4.00		p<.001	p<.005	p<.001	p<.003	
18	Knowledge for continued growth & development	4.06	4.14	4.07	3.95						
19	Ability to earn a good salary	3.66	3.88	3.30	2.88			p<.001	p<.005	p<.001	
20	Competence to use library	3.79	3.64	4.00	3.26			p<.01			p<.001
21	Ability to listen to people carefully	4.49	4.45	4.50	4.69						
22	Capacity to be trainable or reskilled	4.43	4.33	4.20	4.12						
23	Ability to think laterally	4.05	4.31	4.17	4.19						
24	Ability to generate wealth in commerce or industry	3.52	3.55	2.90	2.69		p<.002	p<.001	p<.002	p<.001	
25	Self-reliance	4.21	4.10	4.07	4.00						
26	Initiative	4.43	4.45	4.27	4.45						
27	Ability to plan	4.42	4.43	4.40	4.29						
28	Capacity to function effectively as part of a team	4.68	4.62	4.50	4.62						
29	Capacity to attend to detail	3.81	3.83	3.93	4.12			p<.05			
30	Self-discipline	4.21	4.00	4.17	4.12						
31	Ability to manage time	4.30	4.33	4.23	4.14						
32	Capacity to work with minimum supervision	4.30	4.36	4.23	4.05					p<.05	
34	Ability to elicit accurate information from others	4.08	4.38	4.33	4.38	p<.02		p<.05			
35	Motivation & enthusiasm for work	3.96	4.17	4.30	4.43		p<.05	p<.001		p<.05	

Table 3.2: Ranked Mean Ratings by Students & Graduates of the Importance of Generic Skills Outcomes

	Students	
28	Capacity to function effectively as part of a team	4.68
21	Ability to listen to people carefully	4.49
22	Capacity to be trainable or reskilled	4.43
26	Initiative	4.43
17	Self-confidence	4.42
27	Ability to plan	4.42
7	Proficiency in solving workplace problems	4.38
3	Capacity to think logically	4.32
31	Ability to manage time	4.30
32	Capacity to work with minimum supervision	4.30
12	Competence to speak well in public	4.25
25	Self-reliance	4.21
30	Self-discipline	4.21
15	Awareness of consequences of new technology	4.17
34	Ability to elicit accurate information from others	4.08
18	Knowledge for continued growth & development	4.06
23	Ability to think laterally	4.05
11	Understanding of career options	4.01
1	Understanding of themselves & potential	4.00
5	Ability to resolve interpersonal conflicts	3.96
35	Motivation & enthusiasm for work	3.96
29	Capacity to attend to detail	3.81
20	Competence to use library	3.79
14	Knowledge to maintain ethical standards	3.77
10	Sensitivity to others' problems & difficulties	3.75
19	Ability to earn a good salary	3.66
24	Ability to generate wealth in commerce or industry	3.52
2	Ability to serve society in useful ways	3.45
13	Understanding of social & behav. sciences	3.43
8	Ability to write well	3.43
9	Development of personal & ethical values	3.40
6	Capacity to contribute to community development	3.36
4	Preparation for further postgraduate study	2.96
16	Understanding of mathematical disciplines	2.66

	Graduates	
7	Proficiency in solving workplace problems	4.67
3	Capacity to think logically	4.62
28	Capacity to function effectively as part of a team	4.62
17	Self-confidence	4.45
26	Initiative	4.45
21	Ability to listen to people carefully	4.45
27	Ability to plan	4.43
34	Ability to elicit accurate information from others	4.38
32	Capacity to work with minimum supervision	4.36
31	Ability to manage time	4.33
22	Capacity to be trainable or reskilled	4.33
23	Ability to think laterally	4.31
12	Competence to speak well in public	4.26
1	Understanding of themselves & potential	4.24
11	Understanding of career options	4.19
35	Motivation & enthusiasm for work	4.17
18	Knowledge for continued growth & development	4.14
25	Self-reliance	4.10
5	Ability to resolve interpersonal conflicts	4.02
30	Self-discipline	4.00
14	Knowledge to maintain ethical standards	3.90
19	Ability to earn a good salary	3.88
29	Capacity to attend to detail	3.83
15	Awareness of consequences of new technology	3.79
8	Ability to write well	3.74
20	Competence to use library	3.64
10	Sensitivity to others' problems & difficulties	3.64
9	Development of personal & ethical values	3.57
24	Ability to generate wealth in commerce or industry	3.55
13	Understanding of social & behav. sciences	3.43
2	Ability to serve society in useful ways	3.24
6	Capacity to contribute to community development	3.02
4	Preparation for further postgraduate study	2.98
16	Understanding of mathematical disciplines	2.83

Table 3.3: Ranked Mean Ratings by Academic Staff & Employers of the Importance of Generic Skills Outcomes

	Academic Staff	
3	Capacity to think logically	4.67
7	Proficiency in solving workplace problems	4.63
28	Capacity to function effectively as part of a team	4.50
21	Ability to listen to people carefully	4.50
27	Ability to plan	4.40
34	Ability to elicit accurate information from others	4.33
35	Motivation & enthusiasm for work	4.30
26	Initiative	4.27
31	Ability to manage time	4.23
32	Capacity to work with minimum supervision	4.23
22	Capacity to be trainable or reskilled	4.20
23	Ability to think laterally	4.17
30	Self-discipline	4.17
1	Understanding of themselves & potential	4.10
18	Knowledge for continued growth & development	4.07
25	Self-reliance	4.07
20	Competence to use library	4.00
8	Ability to write well	3.97
29	Capacity to attend to detail	3.93
17	Self-confidence	3.90
15	Awareness of consequences of new technology	3.87
12	Competence to speak well in public	3.87
14	Knowledge to maintain ethical standards	3.83
5	Ability to resolve interpersonal conflicts	3.80
2	Ability to serve society in useful ways	3.70
9	Development of personal & ethical values	3.63
10	Sensitivity to others' problems & difficulties	3.57
11	Understanding of career options	3.53
6	Capacity to contribute to community development	3.37
19	Ability to earn a good salary	3.30
4	Preparation for further postgraduate study	3.13
13	Understanding of social & behav. sciences	3.10
24	Ability to generate wealth in commerce or industry	2.90
16	Understanding of mathematical disciplines	2.83

	Employers	
21	Ability to listen to people carefully	4.69
7	Proficiency in solving workplace problems	4.62
28	Capacity to function effectively as part of a team	4.62
3	Capacity to think logically	4.62
26	Initiative	4.45
35	Motivation & enthusiasm for work	4.43
34	Ability to elicit accurate information from others	4.38
27	Ability to plan	4.29
23	Ability to think laterally	4.19
31	Ability to manage time	4.14
29	Capacity to attend to detail	4.12
22	Capacity to be trainable or reskilled	4.12
30	Self-discipline	4.12
14	Knowledge to maintain ethical standards	4.05
32	Capacity to work with minimum supervision	4.05
15	Awareness of consequences of new technology	4.02
25	Self-reliance	4.00
17	Self-confidence	4.00
8	Ability to write well	4.00
18	Knowledge for continued growth & development	3.95
5	Ability to resolve interpersonal conflicts	3.93
1	Understanding of themselves & potential	3.86
10	Sensitivity to others' problems & difficulties	3.81
9	Development of personal & ethical values	3.81
11	Understanding of career options	3.60
12	Competence to speak well in public	3.52
20	Competence to use library	3.26
2	Ability to serve society in useful ways	3.19
19	Ability to earn a good salary	2.88
13	Understanding of social & behav. sciences	2.88
4	Preparation for further postgraduate study	2.86
6	Capacity to contribute to community development	2.83
16	Understanding of mathematical disciplines	2.76
24	Ability to generate wealth in commerce or industry	2.69

Table 3.4: Statistically Significant Differences Between Stakeholders' Mean Ratings of Generic Skills Accomplishment of BIT Studen

		Mean Rated Accomplishment				Independent t tests for differences between means (2 tailed test					
Q.	Generic Skill Outcome	Students	Graduates	Staff	Employers	Stud/Grad	Stud/Staff	Stud/Emp	Grad/Staff	Grad/Emp	Staff/Emp
1	Understanding of themselves & potential	3.53	3.52	3.33	3.49						
2	Ability to serve society in useful ways	3.02	3.00	2.71	2.97						
3	Capacity to think logically	3.80	4.10	3.43	3.75		p<.03		p<.001		
4	Preparation for further postgraduate study	2.70	3.05	2.54	3.53			p<.001	p<.02	p<.02	p<.001
5	Ability to resolve interpersonal conflicts	3.37	3.57	2.96	3.11		p<.02		p<.001	p<.007	
6	Capacity to contribute to community development	3.02	2.86	2.71	3.00						
7	Proficiency in solving workplace problems	3.42	3.90	3.54	3.67	p<.02			p<.05		
8	Ability to write well	3.42	3.59	3.21	3.25						
9	Development of personal & ethical values	3.37	3.59	2.64	3.37		p<.001		p<.001		p<.001
10	Sensitivity to others' problems & difficulties	3.51	3.56	2.81	3.26		p<.001		p<.001		p<.01
11	Understanding of career options	3.27	3.54	3.54	3.29						
12	Competence to speak well in public	3.16	3.46	3.62	3.18		p<.03				p<.03
13	Understanding of social & behav. sciences	3.04	3.08	2.39	2.85		p<.003		p<.003		p<.05
14	Knowledge to maintain ethical standards	3.12	3.51	2.96	3.49	p<.05			p<.004		p<.007
15	Awareness of consequences of new technology	3.29	3.21	2.73	3.00		p<.02				
16	Understanding of mathematical disciplines	3.12	3.05	2.57	3.32						p<.004
17	Self-confidence	3.71	3.74	4.07	3.95		p<.04				
18	Knowledge for continued growth & development	3.58	3.77	3.44	3.63						
19	Ability to earn a good salary	3.12	3.75	4.00	3.81	p<.007	p<.001	p<.001			
20	Competence to use library	3.78	3.43	3.43	3.68						
21	Ability to listen to people carefully	3.59	3.83	3.25	3.40		p<.05		p<.001	p<.005	
22	Capacity to be trainable or reskilled	3.96	4.18	3.70	4.03				p<.006		p<.05
23	Ability to think laterally	3.33	3.58	3.12	3.49				p<.02		p<.05
24	Ability to generate wealth in commerce or industry	2.79	3.03	3.26	2.86		p<.02				
25	Self-reliance	3.71	4.08	3.69	3.77	p<.04			p<.03		
26	Initiative	3.82	3.90	3.52	3.75				p<.05		
27	Ability to plan	3.65	3.85	3.34	3.38				p<.002	p<.003	
28	Capacity to function effectively as part of a team	3.86	4.33	3.83	4.05	p<.005			p<.003		
29	Capacity to attend to detail	3.30	3.45	3.28	3.64						p<.05
30	Self-discipline	3.46	3.83	3.00	3.51	p<.05	p<.05		p<.001	p<.05	p<.007
31	Ability to manage time	3.36	3.73	3.34	3.30				p<.04	p<.02	
32	Capacity to work with minimum supervision	4.10	4.33	3.52	3.75		p<.001	p<.04	p<.001	p<.001	
34	Ability to elicit accurate information from others	3.40	3.61	3.44	3.46						
35	Motivation & enthusiasm for work	3.52	3.95	3.48	4.25	p<.02		p<.001	p<.02		p<.001

Fig. 3.1 BIT Student Mean Ratings

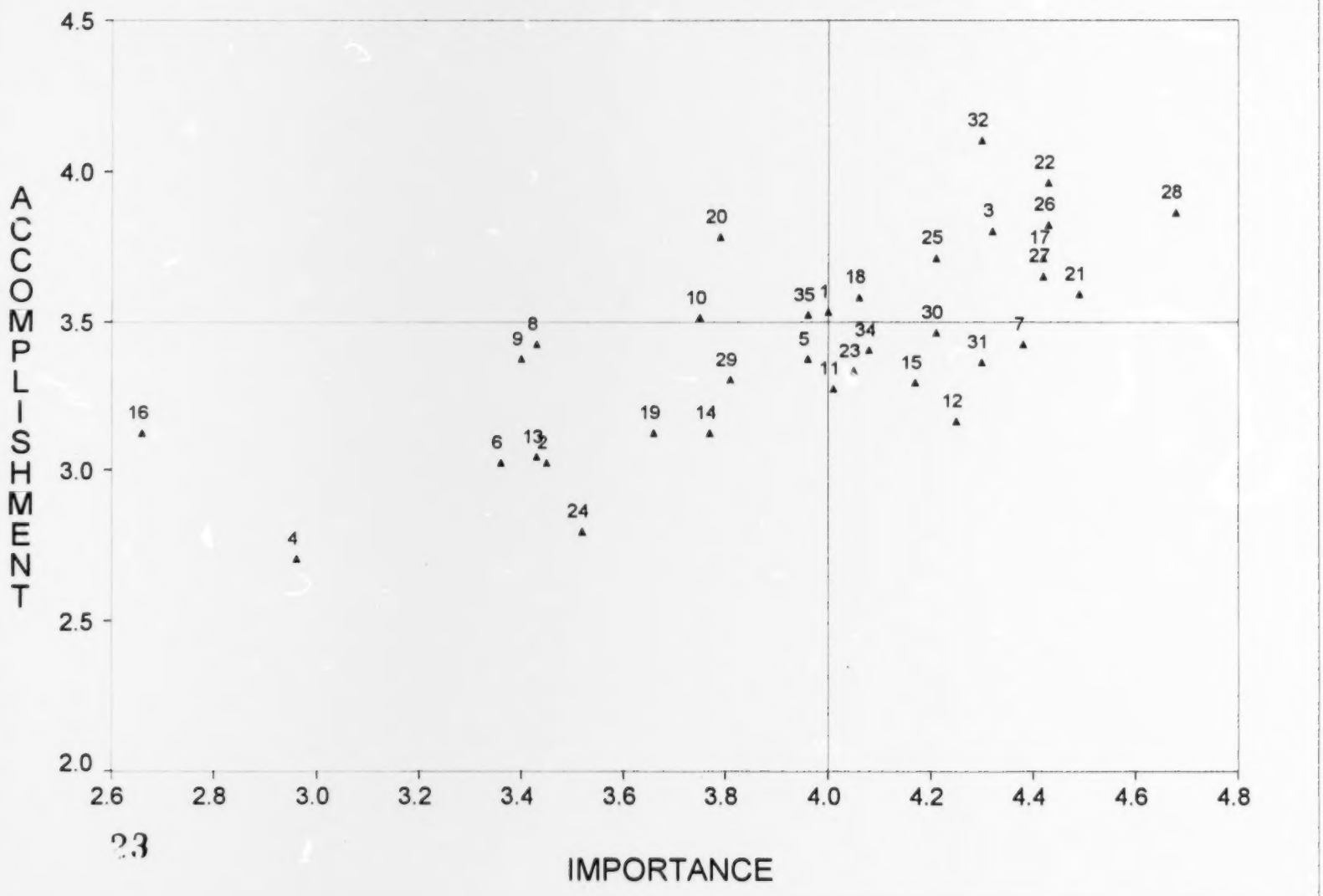

Fig. 3.2 BIT Graduate Mean Ratings

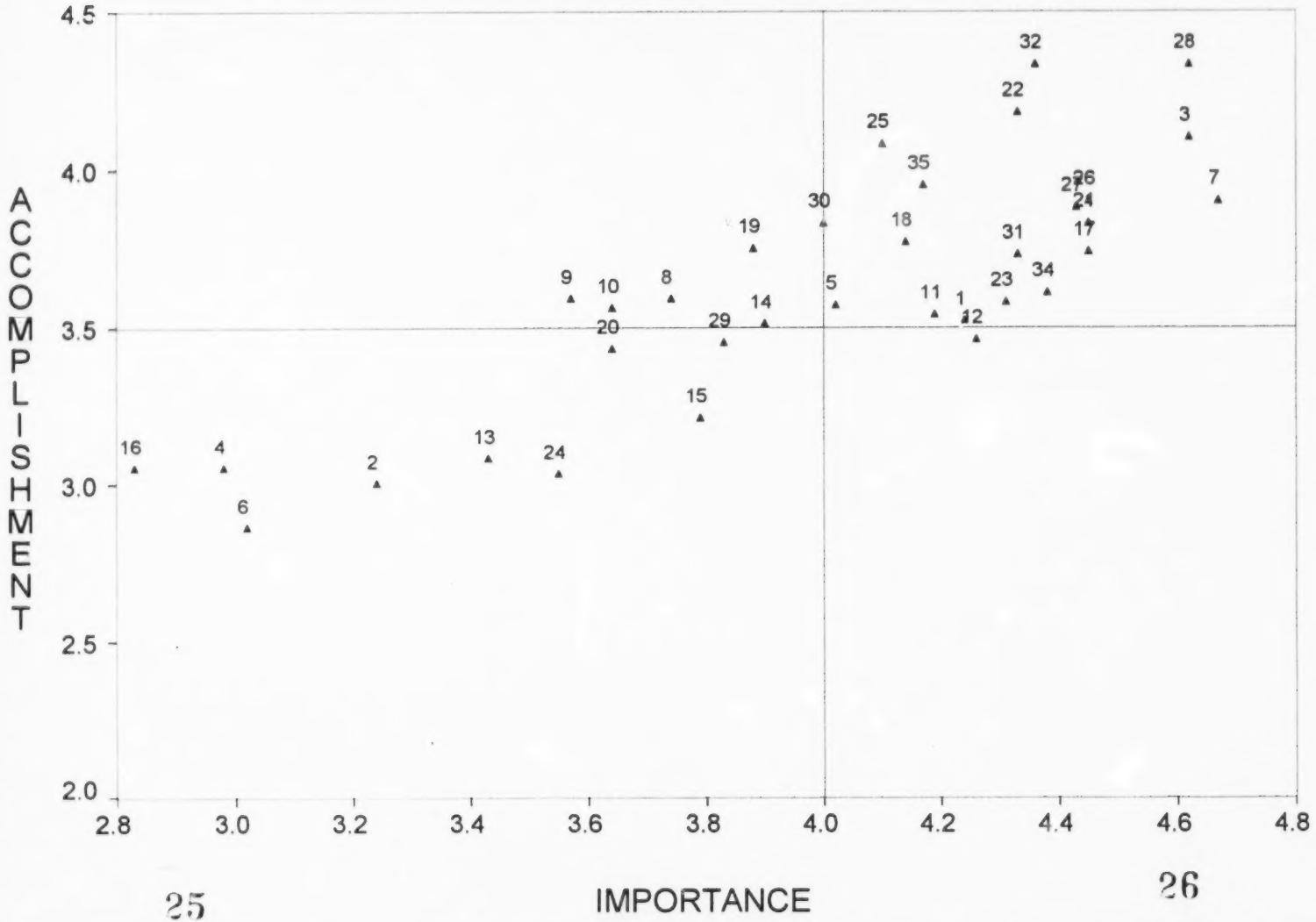

Fig. 3.3 Academic Staff Mean Ratings

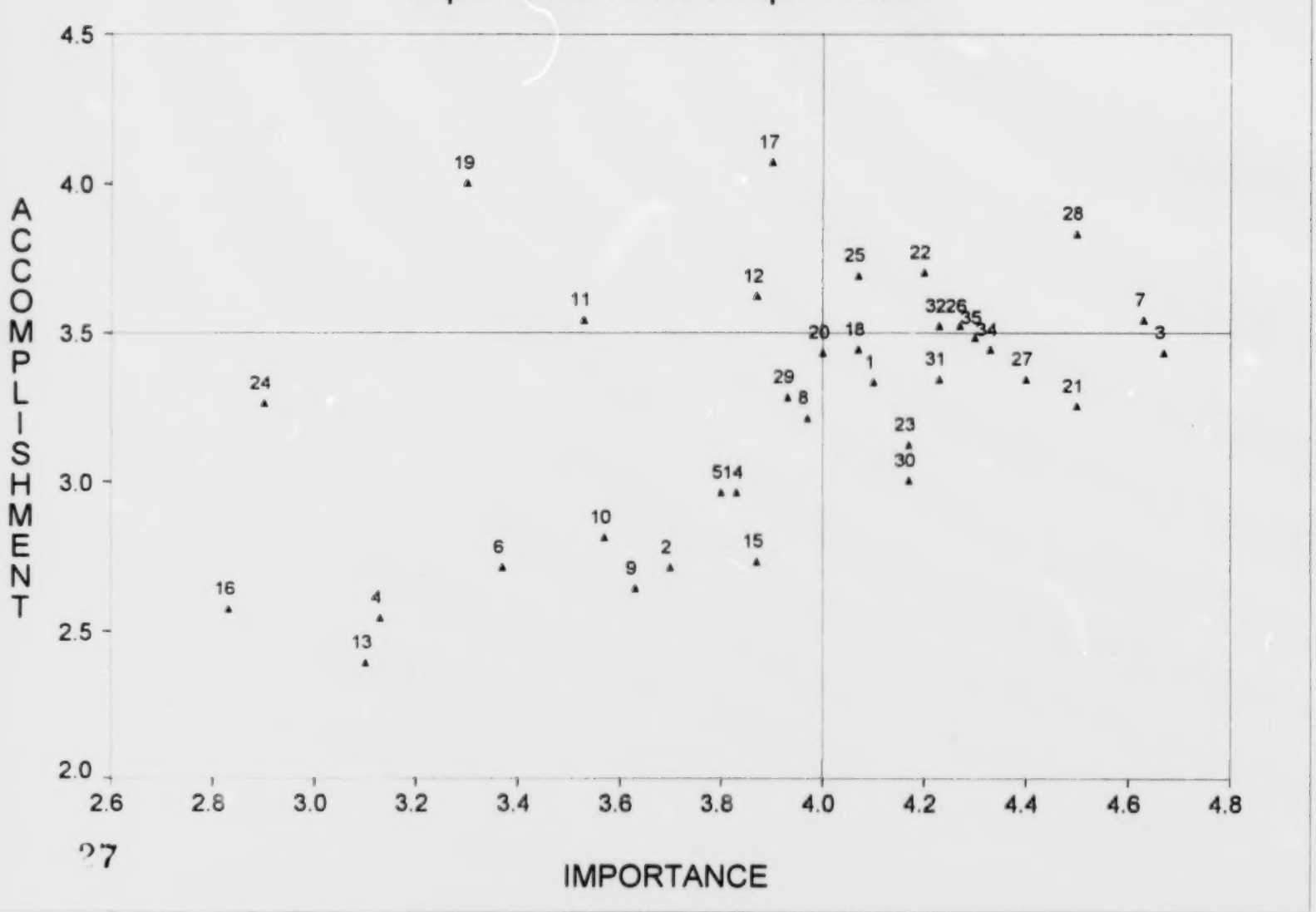

Fig. 3.4 BIT Employer Mean Ratings